

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-087
NPDES NO. CAG912003

GENERAL WASTE DISCHARGE REQUIREMENTS FOR:

Discharge or Reuse of Extracted and Treated Groundwater Resulting From the Cleanup of Groundwater Polluted by Volatile Organic Compounds

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Board) finds that:

1. This National Pollutant Discharge Elimination System (NPDES) general permit regulates discharge, or reuse in conjunction with discharge, of extracted and treated groundwater resulting from the cleanup of groundwater polluted by volatile organic compounds. All dischargers eligible for this general permit must submit a Notice of Intent (NOI) described in Provision E.1. and appropriate annual fee to obtain coverage. Written authorization to initiate the discharge will be issued by the Executive Officer.
2. States may request authority to issue NPDES general permits pursuant to 40 Code of Federal Regulations (CFR) 122.28. On June 8, 1989, the State Water Resources Control Board (hereinafter the State Board) submitted an application to the United States Environmental Protection Agency (hereinafter US EPA) requesting revisions to its NPDES program in accordance with 40 CFR 122.28, 123.62, and 403.10. The application included a request to add general permit authority to its approved NPDES program. On September 22, 1989, the US EPA Region IX approved the State Board's request and granted authorization for the State to issue NPDES general permits.
3. US EPA regulations provide for the issuance of general permits to regulate discharges of waste which result from similar operations, are the same types of waste, require the same effluent limitations, require similar monitoring, and are more appropriately regulated under a general permit rather than individual permits (40 CFR 122.28).
4. Discharges of extracted and treated groundwater to surface waters of the San Francisco Bay Region (except direct discharges to the Pacific Ocean) from groundwater cleanup projects meet the requirements of 40 CFR 122.28 for issuance of a general permit, given that such discharges:
 - a) result from similar operations (all involve extraction, treatment, and discharge of groundwater),
 - b) are the same types of waste (all are groundwater containing volatile organic compounds [VOCs] due to leaks and spills from industries which utilize VOCs in manufacturing),
 - c) require similar effluent limitations for the protection of the beneficial uses of surface waters in the San Francisco Bay Region (this general permit does not cover direct discharges to the Pacific Ocean),
 - d) require similar monitoring, and
 - e) are more appropriately regulated under a general permit rather than individual permits.

Therefore, this Order establishes a general permit regulating extracted and treated groundwater discharges

resulting from the cleanup of groundwater polluted by VOCs and other related wastes. Entities which fall into this category are hereinafter referred to as discharger(s) and may be regulated by this Order. The following VOC-cleanup discharges are normally not eligible for coverage: discharges from cleanups involving significant contamination by metals, pesticides, or other conservative pollutants; discharges from cleanups involving reinjection of treated groundwater; and discharges from sites with other NPDES discharges (e.g. process waste or stormwater).

5. Background

Currently, there are about 90 individual NPDES permits in the San Francisco Bay Region for the discharge of extracted groundwater from VOC site cleanups. It is anticipated that in the future, more VOC-contaminated sites will be conducting groundwater cleanup activities, particularly in Santa Clara County. Because some publicly owned treatment works (POTWs) do not accept new discharges from groundwater cleanups, many of these sites will require waste discharge requirements for discharge to surface water. Thus, the adoption of a NPDES general permit would expedite the processing of applications and enable the Board to better utilize limited staff resources.

Historically, the regulation of extracted/treated groundwater discharges from VOC cleanups has focused on the pollutants identified during the process of investigation of the release at the site. For instance, at sites where solvents were identified as the contaminants of concern, the associated individual NPDES permit contained effluent limits for only those pollutants. In most cases, effluent limits for metals were not included in these permits because they were present at 'natural' or background levels only, not due to a release from site operations.

Federal regulations require all NPDES permits to include numerical water quality-based effluent limits where pollutants are present in the discharge at levels that cause, have the reasonable potential to cause, or contribute to exceedances of applicable water quality standards. The Regional Board was concerned that ambient levels of metals in the groundwater would exceed effluent limits which did not provide allowance for dilution. The inadvertent discharge of background metals would be a result of the effort to protect a beneficial use by extracting groundwater to remove VOCs. A study conducted by Regional Board staff in 1993 concluded that metals concentrations in the effluent of these groundwater discharges would sometimes exceed effluent limits which did not provide allowance for dilution but would rarely exceed concentrations of double such limits.

6. **Basin Plan Requirements** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Board amended its Basin Plan on September 16, 1992, and the State Board approved it on April 27, 1993, with approval from the State Office of Administrative Law pending. Section 1 of the 1992 Basin Plan amendments, "Implementation of Statewide Plans," was remanded by the State Board on June 16, 1994, due to its reliance on two Statewide Plans that are no longer legally in effect. The Basin Plan identifies beneficial uses and water quality objectives for surface and ground waters in the region, as well as discharge prohibitions intended to protect beneficial uses.
7. **Beneficial Uses** The existing and potential beneficial uses of inland streams and other surface waters include:
 - a) municipal and domestic supply
 - b) agricultural supply

- c) industrial process supply
- d) groundwater recharge
- e) water contact and non-contact recreation
- f) wildlife habitat
- g) cold freshwater and warm freshwater habitat
- h) fish migration and fish spawning
- i) industrial service supply
- j) navigation
- k) marine habitat
- l) estuarine habitat
- m) shellfish harvesting
- n) ocean commercial and sport fishing
- o) areas of special biological significance
- p) preservation of rare and endangered species

The surface water bodies for which beneficial uses are specified are listed in Table II-1 of the Basin Plan. The beneficial uses of any specifically identified water body generally apply to all its tributaries.

8. **Basin Plan Prohibitions** The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead end slough, similar confined water, or any immediate tributary thereof."

The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The dischargers' groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

9. **Regional Board Resolution 88-160** Resolution 88-160 strongly encourages dischargers of extracted groundwater from site cleanup projects to reclaim their effluent, or when not technically or economically feasible, to discharge to a POTW. If neither reclamation nor discharge to a POTW is feasible, and if beneficial uses of the receiving water are not adversely affected, then the Board will approve of the discharge as part of a groundwater cleanup project.

Exceptions to the prohibitions referred to in Finding 8 are warranted for this discharge because the discharger must comply with Resolution No. 88-160 before obtaining coverage under this general permit.

10. **Reuse/Reclamation** This Order permits reuse or reclamation of extracted treated groundwater in conjunction with the discharge to surface water, except for purposes of recharge or reinjection. Reuse of extracted treated groundwater can take many forms, such as:

- a) irrigation of landscaping or agriculture
- b) dust control or soil compaction on construction sites
- c) decorative pond or fountain supply
- d) industrial water supply

11. Effluent Limitations

Effluent limits in this permit are based on the plans, policies, and water quality objectives and criteria of the Basin Plan, "Quality Criteria for Water" (EPA 440/5-86-001, 1986 Gold Book), applicable Federal Regulations (40 CFR Parts 122 and 131), the National Toxics Rule (57 FR 60848, December 22, 1992), State and Federal maximum contaminant levels (MCLs), US EPA Region 9 draft guidance (NPDES Permit Limitations for Discharge of Contaminated Groundwater), Best Available Technology Economically Achievable (BAT), and Best Professional Judgement.

Effluent limits for individual VOCs are the more stringent of 5 ug/l or the current drinking water standard. The technology to achieve the 5 ug/l maximum is expected to achieve concentrations at or below 0.5 ug/l (the current method detection limit) most of the time.

In the Board's Best Professional Judgement, limited dilution credit (two times the water quality objective) is appropriate in establishing effluent limits for metals, for the following reasons unique to groundwater cleanup discharges. These are temporary discharges, which will cease when groundwater cleanup standards are met. These discharges are likely to often exceed effluent limits for metals which do not provide allowance for dilution, with no feasible way to come into compliance. Source control is not an option since metals are in ambient groundwater, and treatment of low-ppb concentrations of metals is not feasible at numerous small treatment units. Exceedances of water quality standards in receiving waters near these discharges are unlikely and, if present at all, very small in size and duration, due to the relatively small discharge volumes. Finally, these discharges do not contribute significant metals loadings in the region (less than 400 pounds per year, as estimated in the 1993 Board staff study cited above). With respect to mercury, a mass limit in lieu of a concentration limit is appropriate, given that mercury bioconcentrates in fish and shellfish tissue and given that the water quality objective for this constituent is based on human consumption of fish and shellfish. A limit of 1 gram/day represents a *de minimus* level and is consistent with the Board's 1991 general permit for fuels-cleanup discharges.

If violations of effluent limits for metals occur, the discharger will be required to evaluate the feasibility of treatment and/or the impacts of the exceedance to the receiving water. The Executive Officer will consider these evaluations and subsequent actions taken by the discharger when exercising enforcement discretion.

It is the Board's intent to replace concentration limits with mass limits for metals in the future. This will be done on a watershed by watershed basis, thereby assuring that all significant sources in a given watershed are managed properly to protect water quality. The transition to a watershed approach will be possible once non-point sources are better understood.

12. **California Environmental Quality Act** This action is an Order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of CEQA pursuant to Section 13389 of the California Water Code.
13. **Antidegradation Policies** Federal regulations (40 CFR 131.12) and State Board Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," (collectively, antidegradation policies) require that any increase in pollutant loading to a receiving water shall be consistent with the following:
 - a) Existing instream water uses and the level of water quality necessary to protect existing beneficial uses shall be maintained and protected;
 - b) Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and

wildlife and recreation in and on the water, the quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located;

- c) Where high quality waters constitute an outstanding national resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.
14. The Board, in establishing the requirements contained herein, has taken into consideration the requirements of the State and Federal antidegradation policies and has determined that:
- a) The conditions and effluent limitations established in this Order for discharges of treated groundwater to surface waters in this Region ensure that the existing beneficial uses and quality of surface waters in this Region will be maintained and protected;
 - b) Discharges regulated by this Order should not lower water quality if the terms and conditions of this Order are met.
15. **Notifications** The Board has notified dischargers potentially subject to this Order and interested agencies and persons of its intent under Division 7 of the California Water Code to prescribe waste discharge Requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
16. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, that dischargers of treated groundwater polluted by VOCs and other related wastes shall comply with the following:

A. Prohibitions

- 1. The discharge of waste or hazardous materials in a manner which will degrade the water quality or adversely affect beneficial uses of the waters of the State is prohibited.
- 2. The discharge shall be limited to extracted treated groundwater and added anti-scaling or anti-biofouling chemicals approved by the Executive Officer which do not adversely affect the environment and comply with the requirements of this Order.
- 3. The discharge or reclamation of extracted treated groundwater from a specific site in excess of the maximum flow rate (gallons per day) specified in the Executive Officer's authorization letter is prohibited, unless an increase in gallons per day is approved by the Executive Officer.
- 4. The discharge of extracted treated groundwater polluted by VOCs and related wastes is prohibited unless a NOI for proposed discharge (including any reclamation) has been submitted to the Executive Officer pursuant to Provision E.1., and the Executive Officer has provided the discharger with written authorization to initiate the discharge.

B. Effluent Limitations (surface water discharges only)

1. The effluent (at a point after full treatment but before it joins or is diluted by any other waste stream, body of water, or substance) shall not contain constituents in excess of the following:

Constituent	Instantaneous Maximum Limit (µg/l)	Method of Analysis
a) ORGANICS		
Purgeable Halocarbons		US EPA Method 601 or its equivalent
1,1,1-Trichloroethane	5.0	
Tetrachloroethylene	5.0	
Trichloroethylene	5.0	
1,1-Dichloroethylene	5.0	
1,2-Dichloroethane	0.5	
Vinyl Chloride	0.5	
1,2-Dichloroethylene isomers	5.0	
1,1-Dichloroethane	5.0	
1,1,2-Trichloroethane	5.0	
Methylene Chloride	5.0	
Chloroform	5.0	
any other	5.0	
Purgeable Aromatics		US EPA Method 602 or its equivalent
Benzene	1.0	
Toluene	5.0	
Ethylbenzene	5.0	
Total Xylenes	5.0	
Total Petroleum Hydrocarbons	50.0	US EPA Method 8015 or its equivalent
Ethylene Dibromide	0.02	US EPA Method 504 or its equivalent
Total Polynuclear		
Aromatic Hydrocarbons	15.0	US EPA Method 610 or its equivalent
Semi-Volatile Organics		
Base/Neutral Fraction, per constituent	5.0	US EPA Method 625 or its equivalent
b) INORGANICS		
Arsenic	10.0	
Cadmium	2.2 ¹	
Chromium (VI)	22.0 ²	
Copper	23.6 ¹	
Lead	6.4 ¹	
Nickel	320.0 ¹	
Selenium	10.0	
Silver	8.2 ¹	
Zinc	220.0 ¹	

¹ assumes hardness = 100 mg/l CaCO₃

² dischargers, at their option, may meet this limit as total chromium

2. The effluent shall not contain more than 1 gram/day of mercury.

3. The pH of the effluent shall not exceed 8.5 nor be less than 6.5.
4. Toxicity: The survival of rainbow trout in 96-hour bioassay of the effluent, shall be a three-sample median of 90% survival and shall not be less than 70%.

C. Receiving Water Limitations (surface water discharges only)

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a) floating, suspended, or deposited macroscopic particulate matter or foam;
 - b) bottom deposits or aquatic growths;
 - c) alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d) visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e) toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause excursions of the following limits in waters of the State in any place within one foot of the water surface:
 - a) Dissolved oxygen:

For all tidal waters, upstream of Carquinez Bridge, 7.0 mg/l minimum; downstream of Carquinez Bridge, 5.0 mg/l minimum.

For nontidal waters, waters designated as cold water habitat, 7.0 mg/l minimum; waters designated as warm water habitat, 5.0 mg/l minimum.

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation.
 - b) pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.
3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Clean Water Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Water Reclamation Specifications (water reuse only)

1. Water reclaimed for beneficial reuse as applied shall meet the following limits:

Constituent	Instantaneous Maximum Limit ($\mu\text{g/l}$)	Method of Analysis
Volatile Organic Compounds		US EPA Methods 601/602 or their equivalent
Vinyl Chloride	0.5	
Benzene	0.5	
all others, per constituent	5.0	
Semi-Volatile Organic Compounds per constituent	5.0	US EPA Method 625 or its equivalent
Total Petroleum Hydrocarbons	50.0	US EPA Method 8015 or its equivalent

2. The water reclamation activities shall be those described in the discharger's NOI, including source of groundwater, method of treatment, and location and type of water reuse.
3. No reclaimed water shall be allowed to escape from the authorized use area by airborne spray, nor by surface flow except in minor amounts associated with good irrigation practice, nor from conveyance facilities.
4. Reclamation involving irrigation shall not occur when the ground is saturated.
5. The use of reclaimed water shall not impair the quality of waters of the State, nor shall it create a nuisance as defined by Section 13050(m) of the California Water Code.
6. Adequate measures shall be taken to minimize public contact with reclaimed water and to prevent the breeding of flies, mosquitos, and other vectors of public health significance during the process of reuse.
7. Appropriate public warnings must be posted to advise the public that the water is not suitable for drinking. Signs must be posted in the area, and all reclaimed water valves and outlets labelled, as appropriate.
8. There shall be no cross-connection between the potable water supply and piping containing treated groundwater intended for reuse.
9. Water reclamation consisting of recharge or reinjection is not authorized under this Order.

E. Provisions

1. The NOI for the proposed discharge shall contain the following:
 - a) An effluent reuse or reclamation evaluation, and documentation of the infeasibility of discharging the treated effluent to the local POTW.

- b) If a portion of the extracted and treated groundwater is to be reclaimed, the proposed reuse description, including:
- the volume of water planned for reuse,
 - the type of reuse,
 - the reuse location and areal extent,
 - the method of transport and application i.e., fixed piping and spray application,
 - schedule of operation (time of day, days of week, seasonal changes),
 - precautions planned to minimize runoff and human contact,
 - duration of reuse activity - temporary or permanent project
 - proposed method(s) of monitoring reused groundwater, i.e., analytical and/or procedural, and
 - name, address, and telephone number of user, if different than supplier.
- c) Completed US EPA application forms 1 (General Information) and either 2C (existing discharge) or 2D (new discharge); the information provided need not duplicate the requirements outlined below.
- d) Application fee (not required if the discharge is currently subject to an individual NPDES permit or if the discharger has filed a complete application for an individual NPDES permit).
- e) Results of chemical analyses, including the date the samples were taken, as follows:

Analyses	Influent ¹	Effluent ²	Ground Water ³	Receiving Water ⁴
Volatile Organics (VOCs)				
EPA Method 601	X	X		
EPA Method 602	X	X		
Petroleum Hydrocarbons ⁵				
EPA Method 8015	X	X		
Ethylene Dibromide ⁵				
EPA Method 504	X	X		
PAHs ⁵				
EPA Method 610	X	X		
Semi-Volatile Organics ⁶				
EPA Method 625	X	X		
Metals ⁷	X	X	X	X
Hardness as CaCO ₃	X			X

Notes:

1. May be a weighted average of individual extraction wells, if not operating yet.
2. Not required for proposed discharges with no prior operating experience.
3. From upgradient or cross-gradient wells; need not be repeated if previously performed as part of a site investigation.
4. To be taken 50 feet downstream from point of discharge to surface waters, or if access is limited, at the first point downstream which is accessible.
5. Not required if no evidence of a fuels release.
6. Not required if no evidence of a semi-volatile organics release.
7. Analyze for total (vs. dissolved) metals, with maximum detection limits as follows: cadmium 2 ug/l, mercury 0.2 ug/l, zinc 10 ug/l, other metals 5 ug/l.

All sampling and analyses shall be performed according to appropriate Quality Assurance/Quality Control, as described in Standard Provisions and Reporting Requirements (attached). Chemical analyses shall be performed according to the appropriate US EPA Methods by a certified laboratory and copies of laboratory analytical reports must be submitted.

- f) A brief discussion of the cleanup project, including a description and schematics of the extraction system design.
 - g) The estimated average and maximum daily flow rates, and the maximum capacity of the treatment system.
 - h) A description of operation and maintenance (O & M) procedures for the treatment system, including a description of how the process and physical design of the system will ensure compliance with this Order. The O & M shall also include a description of the safeguards to assure that, should there be a reduction, loss, or failure of power, the dischargers will be able to comply with terms and conditions of this Order. It shall also describe preventive and contingency plans for accidental discharges, and for minimizing the effects of such events.
 - i) Maps indicating extraction well locations, the point(s) of initial discharge to the storm drain, and the path to the location of the discharge to surface water.
 - j) A certification of signatory authority, as described in the Self-Monitoring Program, section H.4.(a).
2. Upon receipt of the Executive Officer's discharge authorization letter, the discharger(s) shall comply with all conditions and limitations of this Order and the discharger authorization letter. Any permit noncompliance constitutes a violation of the Clean Water Act and the California Water Code and is grounds for enforcement action; for discharge authorization letter termination, revocation and reissuance, or modification, for the issuance of an individual permit, or for denial of a renewal application.
3. The Discharger shall maintain a copy of this Order, the Executive Officer's letter of authorization, and a copy of the NOI at the project field office so as to be available at all times to project personnel.
4. EVALUATION OF METALS EFFLUENT LIMITS VIOLATIONS (for Surface Water Discharges Only)

If any inorganic effluent limit is exceeded then the discharger shall take three additional samples for that constituent(s) during the following quarter.

Case 1 If the results of the three additional samples for the effluent **do not** exceed the effluent limit(s) the discharger shall report the results to the Executive Officer in the next Self-Monitoring Report, and shall return to the schedule of sampling and analysis in the Self-Monitoring Program.

Case 2 If the results of **any one of the three** additional samples exceed the effluent limit(s), the discharger shall perform the following:

- a) Calculate the median and maximum concentration values for the constituent(s) of concern, using the three recent samples **and** all samples collected and analyzed for that constituent in the previous 12 month period.

- b) Estimate the mass load discharged in the previous 12 month period for the constituent(s) of concern. Report the results in grams per day and in pounds per year, using the average flow rate for the previous 12 month period.
- c) Report the results to the Executive Officer in the next Self-Monitoring Report, and return to the schedule of sampling and analysis in the Self-Monitoring Program.

Case 3 If the results of **two or three** of the additional samples exceed the effluent limit(s), the discharger shall perform the following:

- a) Calculate median and maximum concentration values and mass load for the constituent(s) of concern, as described in Case 2 above.
- b) Perform a cost analysis for treatment of the discharge for the constituent(s) of concern. The analysis should include, but need not be limited to, a discussion of various treatment technologies or pre-treatment filtration options, the cost and technical feasibility of increased treatment to reduce the constituent(s) of concern, and the amount of reduction in terms of concentration and average annual mass load. A joint effort may be undertaken and submitted by more than one discharger to evaluate cost and feasibility of treatment technologies or options.

If the results of the cost analysis indicates that metals treatment of the discharge does not appear to be a feasible option, then:

- c) Perform an evaluation of the potential adverse impacts to the beneficial uses of the receiving water. The evaluation should include, but need not be limited to, description of the beneficial uses specific to the receiving water, physical and chemical characteristics of the water body and sediment, and the physical, chemical, or biological effects from the constituent(s) on the beneficial uses, including effects related to hardness for metals with hardness-dependent objectives.

If exceedances are only for metals with hardness-dependent objectives, then the discharger may conduct a hardness study prior to completing this task. The hardness study should assess receiving water hardness (as CaCO_3) and compute a "no effect" concentration for affected metals, using (i) the minimum of a statistically significant number of hardness samples, and (ii) hardness-dependent formula for US EPA freshwater criteria. If effluent metals concentrations fall below the computed "no effect" concentration, then the discharger need not complete the remainder of this task.

If the receiving water study finds that the discharge is having potential adverse impacts to beneficial uses of the receiving water, then:

- d) Evaluate control measures other than treatment to reduce the constituent(s) of concern in the discharge, such as re-evaluating options for re-use, discharge to POTW, or alternatives to groundwater extraction.
- e) Within 180 days of the discharger receiving results of the consecutive sampling, report the results of tasks (a) through (d) above to the Executive Officer, including:

- the proposed method to eliminate or minimize future non-compliance, or
- provide a rationale for why no change to the existing program should take place, and
- return to the schedule of sampling and analysis in the Self-Monitoring Program.

The discharger may be required to perform additional evaluations or take additional actions to minimize noncompliance, as deemed necessary by the Executive Officer.

If a violation of the same effluent limit occurs less than 60 months after completion of the required tasks in Cases 1, 2, or 3, then the Executive Officer may waive the evaluation required above. This waiver will not apply if a different inorganic constituent exceeds the effluent limit. In that case, the discharger shall perform an evaluation for that constituent(s).

5. The discharger shall notify the local stormwater management agency in writing of their proposed discharge, with a copy to the Board, at the time they submit a NOI to the Board.
6. The discharger shall comply with the attached Self-Monitoring Program.
7. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through the Self-Monitoring Program included as part of this Order.
8. This Order expires on July 20, 1999. Dischargers regulated by this general permit must file a NOI, as described in Provision E.1., no later than 180 days in advance of such expiration date. A prior NOI may be substituted for a new NOI if the prior one was submitted less than two years before the permit expiration date.
9. This Order shall serve as a general National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall become effective at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

F. Standard Provisions

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code.
2. Duty to Comply
 - a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the discharger must comply with the new standard or prohibition. The Board will revise the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.

- b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise this Order in accordance with such more stringent standards.
 - c. The filing of a request by the discharger for modification or termination of permit coverage, or a notification of planned changes or anticipated non-compliance does not stay any permit condition.
- 3. Duty to Mitigate: The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation.
 - 4. The discharger must notify the Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin to use and discharge a pollutant not reported in the permit application, or (2) a discharge of toxic pollutants not limited by this permit has occurred or will occur in concentrations that exceed the limits specified in 40 CFR 122.42(a).
 - 5. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.
 - 6. All facilities used for transport, treatment, or disposal of waste shall be adequately protected against overflow or washout as a result of a 100-year frequency flood.
 - 7. Property rights: This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws, nor create a vested right for the discharger to continue the waste discharge, nor guarantee the discharger a capacity right in the receiving water.
 - 8. Inspection and Entry: The Board or its authorized representatives shall be allowed:
 - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the Order;
 - b. Reasonable access to and duplication of any records that must be kept under the conditions of the Order;
 - c. To inspect at reasonable times any facility, equipment, practices, or operations regulated or required under the Order; and
 - d. To photograph, sample, and monitor at reasonable times for the purpose of assuring compliance with the Order or as otherwise authorized by the Clean Water Act any substances or parameters at any locations.
 - 9. Duty to Provide Information: The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying,

revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon

request, copies of records required to be kept by its permit.

10. Bypass (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited. The Board may take enforcement action against the discharger for bypass unless:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should be installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment down time or preventative maintenance; and
 - c. The discharger submitted advance notice of the need for a bypass to the Board. If the discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the bypass date. The discharger shall submit notice of an unanticipated bypass as required elsewhere in the Order (24-hour reporting).

The discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such cases, the above bypass conditions are not applicable.

11. Continuation of Expired Permit: This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.
12. Treatment Reliability: The discharger shall, at all times, properly operate and maintain all facilities which are used by the discharger to achieve compliance with this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. All of these procedures shall be described in an Operation and Maintenance manual. The discharger shall keep in a state of readiness all systems necessary to achieve compliance with the conditions of this Order. All systems, both those in service and reserve, shall be inspected and maintained on a regular basis. Records shall be kept of the tests and made available to the Board.
13. Errata: Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information.
14. Transfers: Coverage by this permit is not transferrable to any person except after notice to the Executive Officer. The Executive Officer may require modification of the discharge authorization letter to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
15. Planned Changes: The discharger shall file with the Executive Officer an amended Notice of Intent at least 120 days before making any material change in the character, location, or volume of the discharge.
16. Enforcement: The provisions of this section shall not act as a limitation on the statutory or regulatory authority of the Board.

- a. Any violation of the permit constitutes violation of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act and regulations adopted thereunder, and is the basis for enforcement action, revocation of permit coverage, denial of an application for continued permit coverage, or a combination thereof.
- b. The Board may impose administrative civil liability, may refer a discharger to the state Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of this Order.
- c. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.
- d. A discharger seeking to establish the occurrence of an upset has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for non-compliance shall demonstrate through properly signed contemporaneous operating logs or other relevant evidence that: (i) an upset occurred and the permittee can identify the cause of the upset, (ii) the permitted facility was being properly operated at the time of the upset, (iii) the discharger submitted notice of the upset as required, and (iv) the discharger complied with any remedial measures required.

No determination made before an action for non-compliance, such as during administrative review of claims that non-compliance was caused by an upset, is final administrative action subject to judicial review.

18. Definitions

- a. Bypass means the intentional diversion of waste streams from any portion of the treatment facility.
- b. Overflow means the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system upstream from any part of the treatment facility.
- c. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. It does not mean economic loss caused by delays in production.
- d. Toxic pollutant means any pollutant listed as toxic under Section 307(a) of the Clean Water Act or implementing regulations.
- e. Upset means an exceptional incident in which there is unintentional temporary non-compliance with technology-based effluent limits in the Order because of factors beyond the reasonable control of the discharger. It does not include non-compliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- f. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this Order.

The requirements of this Order apply to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on July 20, 1994.


for Steven R. Ritchie
Executive Officer

Attachment: Self-Monitoring Program - July 20, 1994

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

DISCHARGES OF EXTRACTED AND TREATED GROUNDWATER
RESULTING FROM THE CLEANUP OF GROUNDWATER POLLUTED BY
VOLATILE ORGANIC COMPOUNDS

NPDES NO. CAG912003
ORDER NO. 94-087

SELF-MONITORING PROGRAM

DISCHARGES OF EXTRACTED AND TREATED GROUNDWATER RESULTING FROM THE CLEANUP OF GROUNDWATER POLLUTED BY VOLATILE ORGANIC COMPOUNDS

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383 and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16 and the Environmental Protection Agency's Discharge Monitoring Report (Form 3320-1).

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the 40 CFR 136 or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DOHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by the DOHS. The director of the laboratory whose name appears on the certification or his/her laboratory supervisor who is directly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance/quality control procedures in his or her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A ***grab sample*** is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with daily maximum limits and ***instantaneous maximum*** limits. Grab samples represent only the condition that exists at the time the wastewater is collected.
2. A ***flow sample*** is defined as the accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.
3. ***Duly authorized representative*** is one whose:

- a. Authorization is made in writing by a principal executive officer or ranking elected official;
 - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- 4. **Instantaneous maximum** is defined as the highest measurement obtained for the calendar day.
 - 5. **Median** of an ordered set of values is that value below and above which there is an equal number of values, or which is the arithmetic mean of the two middle levels, if there is no one middle value

D. SPECIFICATIONS FOR SAMPLING AND ANALYSES

The discharger is required to perform sampling and analyses according to the schedule in Table A in accordance with the following conditions:

- 1. **Effluent**
 - a. Samples of effluent and receiving waters shall be collected on days coincident with influent sampling unless otherwise stipulated. The Board or Executive Officer may approve an alternative sampling plan if it is demonstrated to the Board's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.
 - b. Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with influent sample days.
 - c. Fish bioassay samples shall be collected on days coincident with effluent sampling. The fish species to be used for compliance in the 96-hour percent survival static or static renewal fish toxicity bioassay shall be rainbow trout.
 - d. Verification of analytical results:
 - 1) If analytical results are received showing any instantaneous maximum limit is exceeded for any *organic* constituent, a confirmation sample shall be taken within 24 hours and results known within 24 hours of the sampling.
 - 2) If analytical results indicate any instantaneous maximum limit is exceeded for any *inorganic* constituent, actions shall be taken and reported as stipulated in Provision E.4. of the permit.

- e. If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e., the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.
- f. When any type of bypass occurs, grab samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

2. Receiving Waters

- a. Receiving water sampling shall be conducted on days coincident with sampling of effluent.
- b. In tidally-influenced receiving waters, samples shall be collected at each station on each sampling day during the period within 1 hour following low slack water. Where sampling at lower slack water period is not practical, sampling shall be performed during higher slack water period. Samples shall be collected within the discharge plume and downcurrent of the discharge point so as to be representative, unless otherwise stipulated.
- c. Samples shall be collected within one foot below the surface of the receiving water body, unless water depth is less than one foot, in which case a mid-depth sample shall be taken.

E. DESCRIPTION OF SAMPLING STATIONS

	Stations	Description
1.	Influent	
	I-1	At a point in the extraction system immediately prior to inflow to the treatment unit.
2.	Effluent	
	E-1	At a point in the discharge line immediately following treatment and before it joins or is diluted by any other waste stream, body of water, or substance.
3.	Receiving Waters	
	R-1	At a point 50 feet upstream from the point of discharge into the receiving water, or if access is limited, at the first point upstream which is accessible.
	R-2	At a point 50 feet downstream from the point of discharge into the receiving water, or if access is limited, at the first point downstream which is accessible.

F. STANDARD OBSERVATIONS

1. Receiving Water

- a. Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
- b. Discoloration and turbidity: description of color, source, and size of affected area.
- c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
- d. Evidence of beneficial water use: presence of waterfowl or wildlife, fishermen, and other recreational activities in the vicinity of the sampling stations.
- e. Hydrographic condition, if relevant:
 - 1) Time and height of corrected high and low tides (corrected to nearest NOAA location for the sampling date and time of sample and collection).
 - 2) Depth of water columns and sampling depths.
- f. Weather condition:
 - 1) Air temperature.
 - 2) Wind - direction and estimated velocity.
 - 3) Precipitation - total precipitation during the previous five days and on the day of observation.

2. Reclaimed Water

- a. Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
- b. Discoloration and turbidity: description of color, source, and size of affected area.
- c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
- d. Weather condition:
 - 1) Air temperature.

- 2) Wind - direction and estimated velocity.
- 3) Precipitation - total precipitation during the previous five days and on the day of observation.
- e. Deposits, discolorations, and/or plugging in the conveyance system which could adversely affect the system reliability and performance.
- f. Operation of the valves, outlets, sprinkler heads, and/or pressure shutoff valves in conveyance system.

3. **Waste Treatment Facilities**

- a. Odor: presence or absence, characterization, source, and distance of travel.
- b. Weather condition: wind direction and estimated velocity.
- c. Deposits, discolorations, and/or plugging in the treatment system (stripping tower, carbon filters, etc.) which could adversely affect the system reliability and performance.
- d. Operation of the float and/or pressure shutoff valves installed to prevent system overflow or bypass.

G. **RECORDS TO BE MAINTAINED**

- 1. Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the discharger and accessible (at the waste treatment plant), and retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board or Regional Administrator of the U.S. Environmental Protection Agency, Region IX. Such records shall show the following for **each** sample:
 - a. Identity of sampling and observation stations by number.
 - b. Date and time of sampling and/or observations.
 - c. Method of sampling (See Section C - Definition of Terms)
 - d. Type of fish bioassay test (96 hour static or flow-through bioassay)
 - e. Date and time that analyses are started and completed, and name of personnel performing the analyses.
 - f. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to a specific section of **Standard Methods** is satisfactory.

- g. Calculations of results.
- h. Results of analyses and/or observations.
- 2. Weekly discharge flow volume shall be recorded, as well as totaled quarterly and annual flow.
- 3. A tabulation reflecting bypassing and accidental waste spills shall be maintained.

H. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Spill Reports

If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such a discharge to this Regional Board, at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to:

- a. nature of waste or pollutant,
- b. quantity involved,
- c. duration of incident,
- d. cause of spilling,
- e. Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any,
- f. estimated size of affected area,
- g. nature of effects (i.e., fish kill, discoloration of receiving water, etc.),
- h. corrective measures that have been taken or planned, and a schedule of these activities, and
- i. persons/agencies notified.

2. Reports of Plant Bypass, Treatment Unit Bypass and Permit Violation

In the event the discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to permit a plant bypass or treatment unit bypass due to:

- a. Maintenance work, power failures, or breakdown of waste treatment equipment, or
- b. accidents caused by human error or negligence, or

- c. other causes, such as acts of nature,

the discharger shall notify the Regional Board office by telephone as soon as the discharger and its agents have knowledge of the incident and confirm this notification in writing within 5 working days of the telephone notification. The written report shall include time, date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste discharger shall promptly accelerate the monitoring program to analyze the discharge for chemicals which are being treated, at least once every day. Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops, or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

3. The discharger shall file a written technical report to be received at least 30 days prior to advertising for bid (or 60 days prior to construction) on any construction project which would cause or aggravate the discharge of waste in violation of requirements; said report shall describe the nature, cost, and scheduling of all action necessary to preclude such discharge. In no case will any discharge of wastes in violation of permit and order be permitted unless notification is made to the Executive Officer and approval obtained from the Regional Board.

4. **Self-Monitoring Reports**

Written reports shall be submitted on a calendar quarter basis, not later than 30 days following the last day of the quarter. The reports shall be comprised of the following:

a. **Letter of Transmittal:**

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include:

- 1) Identification of all violations of waste discharge requirements found during the reporting period,
- 2) Details of the magnitude, frequency, and dates of all violations,
- 3) The cause of the violations, and
- 4) Discussion of the corrective actions taken or planned and the time schedule for completion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory.

Monitoring reports and the letter transmitting reports shall be signed by a principal executive officer or ranking elected official of the discharger, or by a ***duly authorized representative*** of that person.

The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. Compliance Evaluation Summary

The report format shall be a format that is acceptable to the Executive Officer.

c. Map or Aerial Photograph

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. Results of Analyses and Observations

The report format shall be a format that is acceptable to the Executive Officer.

- 1) If the discharger monitors any pollutant more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Self-Monitoring Report.
- 2) Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.
- 3) The report shall also identify a table identifying by method number the analytical procedures used for analyses. Any special methods shall be identified and should have prior approval of the Board's Executive Officer.
- 4) Lab results shall be copied and submitted as an appendix to the regular report.

e. List of Approved Analyses

- 1) Listing of analyses for which the discharger is approved by the State Department of Health Services.
- 2) List of analyses performed for the discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

3) List of "waived" analyses, as approved by the Executive Officer.

f. **Flow Data**

1) The tabulation pursuant to Section G.2.

g. **Amount of VOCs Removed**

1) An estimate of the VOC mass removal in pounds.


5. **Annual Reporting**

By January 30 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calendar year. The annual report shall contain all data required for the fourth quarter in addition to summary data required for annual reporting. This report may be submitted in lieu of the report for the fourth quarter of a calendar year.

The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 94-087.
2. Was adopted by the Board on July 20, 1994.
3. May be revised by the Executive Officer pursuant to US EPA regulations (40 CFR 122.36); other revisions may be ordered by the Board.



for STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachment: Table A

TABLE A - SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1	E-1	R-1/R-2
TYPE OF SAMPLE	Grab	Grab	Grab
Flow Rate (gpd)		W ³	
Total Dissolved Solids		Q	Y
Bioassay 96-hr % survival		Y	
Turbidity (NTUs)		M	
pH (units)	M	M	Y
Dissolved Oxygen (mg/l and % saturation)			Y
Standard Observations		M ⁴	Y
Temperature (°C)		M	Y
hardness = mg/l CaCO ₃		Y	Y
Arsenic (µg/l)		Y	
Cadmium (µg/l)		Y	
Chromium VI (µg/l) ⁵		Y	
Copper (µg/l)		Y	
Lead (µg/l)		Y	
Mercury (µg/l)		Y	
Nickel (µg/l)		Y	
Selenium (µg/l)		Y	
Silver (µg/l)		Y	
Zinc (µg/l)		Y	
EPA 601 or equivalent	M (W/M)	M (W/M)	V
EPA 602 ¹ or equivalent	M (W/M)	M (W/M)	V
EPA 624 ² or equivalent	Y	Y	V
EPA 625 ¹ or equivalent	Y	Y	V
EPA 610 ¹ or equivalent	Y	Y	V
EPA 504 ¹ or equivalent	Y	Y	V
EPA 8015 ¹ or equivalent (Modified TPH gasoline and diesel)	M (W/M)	M (W/M)	V

LEGEND FOR TABLE A

TYPES OF STATIONS

I = influent
E = effluent
R = receiving water

FREQUENCY OF SAMPLING

W = once each week
M = once each month
Y = once each year
Q = quarterly, once in March, June, September, and December
(W/M) = *if a new treatment system or a new discharge*, weekly for the first month followed by monthly thereafter
V = within 24 hours after an exceedance is identified in E-1

Note for metals sampling and analysis:

- Metal samples shall be analyzed for total (unfiltered) constituents.
- The maximum method detection limits shall be: cadmium 2 ug/l, mercury 0.2 ug/l, zinc 10 ug/l, and other metals 5 ug/l.

¹ if known to be present in the influent

² in lieu of EPA 601 and 602 analysis

³ if a portion of the effluent is being reclaimed, report the total flow *and* the volume diverted to reclamation

⁴ also for reclaimed water, if applicable

⁵ or optional *total* chromium analysis